CATALOG DOCUMENTATION
EMAP SURFACE WATERS PROGRAM LEVEL DATABASE
1993-1994 MID-ATLANTIC DATA
STREAM FISH TISSUE CONTAMINANTS (ORGANICS) DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog Document
EMAP Surface Waters Stream Database
1993-1994 Mid-Atlantic Streams
Stream Fish Tissue Contaminants (Organics) Data Summarized by Stream

1.2 Authors of the Catalog Entry
U.S. EPA NHEERL Western Ecology Division
Corvallis, OR

1.3 Catalog Revision Date
February 1999

1.4 Data Set Name
FTORG

1.5 Task Group
Surface Waters

1.6 Data Set Identification Code
127

1.7 Version
002

1.8 Requested Acknowledgment
These data were produced as part of the U.S. EPA's Environmental Monitoring and Assessment Program (EMAP). If you publish these data or use them for analyses in publications, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U.S. Environmental Protection Agency through its EMAP Surface Waters Program, it has not been subjected to Agency review, and therefor does not necessarily reflect the views of the Agency and no official endorsement of the conclusions should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

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2.2 Investigation Participant - Sample Collection

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State of Virginia
State of West Virginia
State of Maryland
State of Pennsylvania
University of Maine
U.S. Fish and Wildlife Service
U.S. Environmental Protection Agency
Office of Research and Development
Region III

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

The primary function of the stream fish data are to provide a snapshot of the fish assemblage present in the stream at the time of sampling. The fish community represents an integral component of stream biological integrity and represents a snapshot of a publicly visible reflection of stream quality.

3.2 Keywords for the Data Set

Fish assemblage, fish community, fish species identification, fish tissue contamination

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The Environmental Monitoring and Assessment Program (EMAP) was designed to periodically estimate the status and trends of the Nation's ecological resources on a regional basis. EMAP provides a strategy to identify and bound the extent, magnitude and location of environmental degradation and improvement on a regional scale based on a probability-based statistical survey design.

4.2 Data Set Objective

This data set is part of a demonstration project to evaluate approaches to monitoring streams in EMAP. The data set contains the results of multihabitat sample of the fish assemblage taken during spring base flow-. A subsample of fish were selected for analysis of organic contaminant concentrations in tissue of a whole fish sample submitted for analysis.

4.3 Data Set Background Discussion

The fish community within a stream is an integral component of stream biological integrity and represents a publicly visible reflection of stream quality. Contamination of the fish community is a direct threat to the health of the fish community as well as to the human population consuming these fish. This data set contains the organic contaminant concentrations in whole-fish tissue sample collected at each stream.

4.4 Summary of Data Set Parameters

Fish Tissue Organic Contaminants parameters include wet weight concentrations of target organic contaminants such as Hexachlorobenzene, Endosulfan, and Alpha Chlordane.

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

To obtain a sample of the fish assemblage within a stream during a two month sampling window from April through mid-June. To obtain enough individuals of a single species suitable for tissue contaminant analysis.

5.1.2 Sample Collection Methods Summary

The assemblage was sampled using a single pass with a backpack electrofishing unit distributed in multiple habitats throughout the stream. A subsample of five or more fish from a single species was selected for analysis of organic contaminants in the whole fish.

5.1.3 Sampling Start Date

April 1993

5.1.4 Sampling End Date

June 1994

5.1.5 Platform

NA

5.1.6 Sampling Gear

Backpack electrofishing unit

5.1.7 Manufacturer of Instruments

NA

5.1.8 Key Variables

NA

5.1.9 Sampling Method Calibration
NA

5.1.10 Sample Collection Quality Control
See Lazorchak, et al. 1998.

5.1.11 Sample Collection Method Reference
Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group, 1994 Activities. EPA 600/X-91/080, Rev. 2.00. U.S. Environmental Protection Agency, Las Vegas Nevada.

Lazorchak, J.M., Klemm, D.J., and Peck D.V. (editors). 1998. Environmental Monitoring and Assessment Program- Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F.

U.S. Environmental Protection Agency, Washington, D.C.

5.1.12 Sample Collection Method Deviations

5.2 Data Preparation and Sample Processing

5.2.1 Sample Processing Objective
See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.2 Sample Processing Methods Summary
See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.3 Sample Processing Method Calibration
See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.4 Sample Processing Quality Control
See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

5.2.5 Sample Processing Method Reference
See Lazorchak, et al. (1998) and Chaloud and Peck (1994).

6. DATA MANIPULATIONS

6.1 Name of New or Modified Values
None.

6.2 Data Manipulation Description
See Chaloud and Peck (1994).

7. DATA DESCRIPTION

7.1 Description of Parameters

Parameter Name	Data Type	Len	Format	Parameter Label
ALDRIN	Num	8		Wet wt. concentration Aldrin (ug/g)
ALDRINT	Char	3		Aldrin flag
A_BHC	Num	8		Wet wt. concentration Alpha-BHC (ug/g)
A_BHCT	Char	3		Alpha-BHC flag
A_CHL	Num	8		Wet wt. concentration Alpha Chlordane (ug/g)
A_CHLT	Char	3		Alpha Chlordane flag
B_BHC	Num	8		Wet wt. concentration Beta-BHC (ug/g)
B_BHCT	Char	3		Beta-BHC flag
COMMON_N	Char	20		Common name of sample species
C_NCHL	Num	8		Wet wt. concentration Cis-nonachlor (ug/g)
C_NCHLT	Char	3		Cis-nonachlor flag
DATE_COL	Num	8	MMDDYY	Date stream visited
DIELDRIN	Num	8		Wet wt. concentration Dieldrin (ug/g)
DIELDT	Char	3		Dieldrin flag
D_BHC	Num	8		Wet wt. concentration Delta-BHC (ug/g)
D_BHCT	Char	3		Delta-BHC flag
ENDRIN	Num	8		Wet wt. concentration Endrin (ug/g)
ENDRINT	Char	3		Endrin flag
E_SUL1	Num	8		Wet wt. concentration Endosulfan I (ug/g)
E_SUL1T	Char	3		Endosulfan I flag
E_SUL2	Num	8		Wet wt. concentration Endosulfan II (ug/g)
E_SUL2T	Char	3		Endosulfan II flag
G_BHC	Num	8		Wet wt. conc. Gamma-BHC (Lindane) (ug/g)
G_BHCT	Char	3		Gamma-BHC flag
G_CHL	Num	8		Wet wt. concentration Gamma Chlordane (ug/g)
G_CHLT	Char	3		Gamma Chlordane flag
HCB	Num	8		Wet wt. conc. Hexachlorobenzene (ug/g)
HCBT	Char	3		Hexachlorobenzene flag
HCHL	Num	8		Wet wt. concentration Heptachlor (ug/g)
HCHLEP	Num	8		Wet wt. conc. Heptachlor Epoxide (ug/g)
HCHLEPT	Char	3		Heptachlor Epoxide flag
HCHLT	Char	3		Heptachlor flag
LAT_DD	Num	8		Sample Site Latitude (decimal degrees)
LIPID	Num	8		% lipids of composite sample
LON_DD	Num	8		Sample Site Longitude (decimal degrees)
MIREX	Num	8		Wet wt. concentration Mirex (ug/g)
MIREXT	Char	3		Mirex flag
MOISTURE	Num	8		% moisture of composite sample
OXYCHL	Num	8		Wet wt. concentration Oxychlordane (ug/g)
OXYCHLT	Char	3		Oxychlordane flag
O_DDD	Num	8		Wet wt. concentration O,P DDD (ug/g)
O_DDDT	Char	3		O,P DDD flag
O_DDE	Num	8		Wet wt. concentration O,P DDE (ug/g)
O_DDET	Char	3		O,P DDE flag
O_DDT	Num	8		Wet wt. concentration O,P DDT (ug/g)
O_DDTT	Char	3		O,P DDT flag
PCBTOT	Num	8		Total PCBs

7.1 Description of Parameters, continued

PRI_SEC	Num	8	Primary/secondary target sample (1/2)
P_DDD	Num	8	Wet wt. concentration P,P DDD (ug/g)
P_DDDT	Char	3	P,P DDD flag
P_DDE	Num	8	Wet wt. concentration P,P DDE (ug/g)
P_DDT	Num	8	Wet wt. concentration P,P DDT (ug/g)
P_DDTT	Char	3	P,P DDT flag
SAMP_ID	Num	8	Sample identification code (barcode)
SPECIES	Char	23	Genus and species of sample
STRMNAME	Char	40	Stream Name from 7.5 map
STRM_ID	Char	9	Stream ID
TNONCHL	Num	8	Wet wt. concentration Trans-nonachlor (ug/g)
VISIT_NO	Num	8	Visit Number
YEAR	Num	8	Sample year

7.1.1 Precision to Which Values are Reported

7.1.2 Minimum Value in Data Set by Parameter

Name	Min
ALDRIN	0.0002
A_BHC	0.00018
A_CHL	0.00018
B_BHC	0.0002
C_NCHL	0.00019
DIELDRIN	0.0002
D_BHC	0.0002
ENDRIN	0.00018
E_SUL1	0.0004
E_SUL2	0.00034
G_BHC	0.0002
G_CHL	0.00019
HCB	0.00017
HCHL	0.0002
HCHLEP	0.00015
LAT_DD	36.5535
LIPID	0.51
LON_DD	-83.244438889
MIREX	0.00019
MOISTURE	66.3
OXYCHL	0.00018
O_DDD	0.00017
O_DDE	0.00019
O_DDT	0.00016
PCBTOT	0.00533
PRI_SEC	1
P_DDD	0.0002
P_DDE	0.00064
P_DDT	0.00017
SAMP_ID	201753
TNONCHL	0.00029
VISIT_NO	1
YEAR	1993

7.1.3 Maximum Value in Data Set by Parameter

Name	Max
ALDRIN	0.00074
A_BHC	0.00072
A_CHL	0.14381
B_BHC	0.00048
C_NCHL	0.06084
DIELDRIN	0.06245
D_BHC	0.00069
ENDRIN	0.00372
E_SUL1	0.0107
E_SUL2	0.00411
G_BHC	0.00225
G_CHL	0.09103
HCB	0.00277
HCHL	0.00108
HCHLEP	0.07564
LAT_DD	41.956013889
LIPID	12.37
LON_DD	-75.2059
MIREX	0.00069
MOISTURE	81.4
OXYCHL	0.04267
O_DDD	0.00642
O_DDE	0.00113
O_DDT	0.01777
PCBTOT	1.00292
PRI_SEC	2
P_DDD	0.01694
P_DDE	55.66273
P_DDT	0.00701
SAMP_ID	2129572
TNONCHL	0.15
VISIT_NO	2
YEAR	1994

7.2 Data Record Example

7.2.1 Column Names for Example Records

ALDRIN,ALDRINT,A_BHC,A_BHCT,A_CHL,A_CHLT,B_BHC,B_BHCT,COMMON_N,C_NCHL,C_NCHLT,
DATE_COL,DIELDRIN,DIELDT,D_BHC,D_BHCT,ENDRIN,ENDRINT,E_SUL1,E_SUL1T,E_SUL2,
E_SUL2T,G_BHC,G_BHCT,G_CHL,G_CHLT,HCB,HCBT,HCHL,HCHLEP,HCHLEPT,HCHLT,LAT_DD,
LIPID,LON_DD,MIREX,MIREXT,MOISTURE,OXYCHL,OXYCHLT,O_DDD,O_DDDT,O_DDE,O_DDET,
O_DDT,O_DDTT,PCBTOT,PRI_SEC,P_DDD,P_DDDT,P_DDE,P_DDT,P_DDTT,SAMP_ID,SPECIES,
STRMNAME,STRM_ID,TNONCHL,VISIT_NO,YEAR

7.2.2 Example Data Records

0.00020,"U",0.00020,"U",0.00020,"U",0.00020,"U","BLACKNOSE DACE",0.00034,
"",04/27/94,0.000480,"",0.00020,"U",0.00020,"U",0.00040,"U",0.00040,"U",
0.00020,"U",0.00028,"",0.00021,"",0.00020,0.00020,"U","U",38.46550,3.86,
81.02590,0.00020,"U",72.9,0.00030,"",0.00030,"",0.00020,"U",0.00020,"U",
0.01118,1,0.00020,"U",0.00149,0.00020,"U",212884,"Rhinichthys atratulus",
"CHESTNUT KNOB","WV757S",0.00120,1,1994

0.00020,"U",0.00020,"U",0.00507," ",0.00020,"U","EMERALD SHINER",0.00280,
"",04/20/94,0.000630," ",0.00020,"U",0.00020,"U",0.00210," ",0.00071,
"",0.00020,"U",0.00386," ",0.00032," ",0.00020,0.00035,"","U",37.89050,
3.65,-81.82340,0.00025," ",73.0,0.00157," ",0.00078,"",0.00020,"U",0.00203,
" ",0.31720,1,0.00106,"",0.00520,0.00020,"U",212880,"Notropis atherinoides",
"SPRUCE FORK","WV759S",0.00919,1,1994

0.00020,"U",0.00020,"U",0.00309," ",0.00020,"U","HOGSUCKER",0.00401,
" ",04/20/94,0.000410," ",0.00020,"U",0.00020,"U",0.01070," ",0.00202,
" ",0.00020,"U",0.00149,"",0.00020,"U",0.00020,0.00020,"U","U",37.89050,0.87,
81.82340,0.00020,"U",76.8,0.00121," ",0.00179," ",0.00020,"U",0.00388,
" ",1.00292,2,0.00287,"",0.00240,0.00216," ",212881,
"Hypentelium nigricans","SPRUCE FORK","WV759S",0.00903,1,1994

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude
-83 Degrees 14 Minutes 39.98 Seconds West (-83.244438889 Decimal Degrees)

8.2 Maximum Longitude
-75 Degrees 12 Minutes 21.24 Seconds West (-75.2059 Decimal Degrees)

8.3 Minimum Latitude
36 Degrees 33 Minutes 12.60 Seconds North (36.5535 Decimal Degrees)

8.4 Maximum Latitude
41 Degrees 57 Minutes 21.65 Seconds North (41.956013889 Decimal Degrees)

8.5 Name of Area or Region
Mid Atlantic: EPA Region III which includes Delaware, Maryland, New York, Virginia, and West Virginia

9. QUALITY CONTROL / QUALITY ASSURANCE

9.1 Data Quality Objectives
See Chaloud and Peck (1994)

9.2 Quality Assurance Procedures
See Chaloud and Peck (1994)

9.3 Unassessed Errors
NA

10. DATA ACCESS

10.1 Data Access Procedures

10.2 Data Access Restrictions

10.3 Data Access Contact Persons

10.4 Data Set Format

10.5 Information Concerning Anonymous FTP

10.6 Information Concerning WWW

10.7 EMAP CD-ROM Containing the Data

11. REFERENCES

Chaloud, D.J. and D.V. Peck. 1994. Environmental Monitoring and Assessment Program - Surface Waters: Integrated Quality Assurance Project Plan for the Surface Waters Resource Group. U.S. Environmental Protection Agency. Office of Research and Development. Washington, D.C.

Lazorchak, J.M., Klemm, D.J., and Peck D.V. (editors). 1998. Environmental Monitoring and Assessment Program- Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Wadeable Streams. EPA/620/R-94/004F. U.S. Environmental Protection Agency, Washington, D.C.

12. TABLE OF ACRONYMS

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